an indeterminate future. The problem method of attack is the desirable method of procedure, and the problems must be those that are real to the child.

Parts II, III, IV, and V take up respectively the biological, agricultural, hygienic, and physical phases of science for grade pupils. Chapters in Part II suggest materials and methods to be used in teaching children about birds, insects, pets and domestic animals, trees, flowers, seed dispersal, and flowerless plants. Similarly, the other parts deal with various subdivisions of the main topics.

Chapters on the teaching of hygiene stress the formation of correct habits and give helpful suggestions and advices for accomplishing this.

Part VI, making up nearly one-third of the book, is an outline for an elementary science course by grades and by seasons. It is one that has been tried out by the author for several years in the practice school of the Mankato (Minnesota) Normal School. The book closes with a bibliography of three pages.

The author's point of view throughout is sane; his understanding of the child's mental processes is sound; and his suggestions regarding methods are very helpful. The book can well be followed by the teacher who desires a good course in nature-study and sound advice as to the methods of procedure.

HODGE, C. F., and DAWSON, JEAN *Civic Biology*. Boston: Ginn & Co., 1918. Pp. viii+380. $1.60.

This civic biology was announced by the publishers many years ago and has been looked forward to with great interest. The title suggests the point of view, namely, that there are large masses of information at our disposal which if only applied would make living much more agreeable. The author says: "Select the problems that your community needs to have studied most. A single problem actually worked out to a definite civic advance will be worth more educationally than a hundred problems memorized from a book." The problems selected for discussion are mainly those concerned with man's fight against the ravages of destructive plants and animals. The insect problem stated in chapter iii gives an appalling picture of the reproductive power of insects and of their destructiveness to crops. The following chapters make it apparent that birds are the chief reliance in combating these insect pests. Chapters on plant problems list the many injurious weeds and poisonous plants. Chapter x, on flies, and chapter xi, on mosquitoes, impress the student again with the fabulous rate of reproduction and the dangers that lurk in their power of carrying disease. There follow several other chapters on injurious insects. Chapter xvii

takes up the rat problem. Then come chapters that marshal an astounding array of facts regarding fungi, bacteria, and the diseases they produce in animals and plants. Next to pass in review are tapeworms, liver flukes, trachinae, and other animal parasites.

The book must leave a vivid impression of the many problems man is facing in his struggle to live and the need of concerted action to master them. But it is an ugly, not a beneficient, nature that faces the pupil; the pupil must feel that "nature is red in tooth and claw." The book may make him aware of the problems of civic biology, but it may also make him a confirmed pessimist.

CALDWELL, O W., and EIKENBERRY, W. L. *General Science.* Boston: Ginn & Co., 1918. Pp. xii+404. $1.28.

This is a revised edition of the *General Science* first put out by these authors in 1914. That a new edition is so soon demanded is good evidence that the book has had wide use. General science was and still is an experiment in the schools. The authors say in their preface: "It is also generally recognized that education by the use of science should tend to better understanding and better use of the types of scientific knowledge which relate to common experience. It is, therefore, the object of this course to develop a usable fund of knowledge about common things and helpful and trustworthy habits of considering common experiences in the field of science." General science deals with all sorts of common things as distinct from the special sciences that deal each with one sort of things. It is interesting to note what changes have been made in this revised edition on the basis of experience. The book is a third larger than before. The material of the first edition has changed little except as additions have been made. The major additions are in five new chapters, xvii–xxi, the first three on the use of electricity and the other two on elementary astronomy. In these chapters the material has been wisely selected and deals with the application of electricity to heating and lighting about the home, together with such simple facts of the universe as every intelligent person wants. A star map, showing the constellations whose positions are described, would add to the ease of locating these. The dial readings on page 208 are confusing, as the indicators point apparently directly toward the numbers rather than slightly to one side. The pupil will be likely to read the upper right-hand one 1,097 and the one below it 1,000,900 instead of as given in the diagram, and will wonder why his readings are incorrect.

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